

IN THE CLAIMS:

Please amend claims 1, 13, 16 and 24 as indicated herein. All pending claims are produced below. In addition, the status of each is also indicated below and appropriately noted as “Original,” “Currently Amended,” “Canceled,” “New,” “Withdrawn,” “Previously Presented” and “Not Entered” as requested by the Office.

1. (Currently Amended) A method of handling a message received at a messaging system server, the method comprising:

storing, in non-persistent storage, the message;

attempting to deliver the message;

determining whether the attempting to deliver the message was successful;

if the attempting to deliver the message was not successful, continuing ,after the

attempt, to store the message in the non-persistent storage for a delay interval;

responsive to the attempt being if the attempting to deliver the message was

successful, removing the message from the non-persistent storage; and

after [[a]] the delay interval has elapsed, responsive to the attempt not being

successful, wherein the message still continuing to be stored in non-persistent

storage, saving the message to persistent storage so that the message can be

retrieved and delivered.

2. (Canceled)

3. (Previously Presented) The method of claim 1, wherein storing in the non-persistent storage comprises storing in a log queue.

4. (Previously Presented) The method of claim 1, further comprising transmitting an acknowledgement message to a client that sent the received message, the acknowledgement message indicating that the received message will not be lost by the server in the case of server failure.

5. (Previously Presented) The method of claim 4, wherein transmitting the acknowledgment message to the client comprises transmitting the acknowledgment message to the client for successful delivery of the received message.

6. (Previously Presented) The method of claim 4, wherein transmitting the acknowledgment message to the client comprises transmitting the acknowledgment message to the client for storage of the received message in persistent storage.

7. (Original) The method of claim 1, further comprising determining the delay interval.

8. (Original) The method of claim 7, wherein determining the delay interval comprises: determining at least one metric based on messages handled by the server; and determining the delay interval based on the at least one metric.

9. (Original) The method of claim 8, wherein the metric comprises a metric based on a number of sending clients using the server to deliver messages.

10. (Original) The method of claim 7, wherein determining the delay interval comprises dynamically determining the delay.

11. (Previously Presented) The method of claim 1, wherein the message was received over a communications network.

12. (Previously Presented) The method of claim 1,
wherein the message comprises a guaranteed message; and
wherein the messaging system comprises a message-oriented middleware system.

13. (Currently Amended) A method of handling guaranteed messages received at a message-oriented middleware server over a network, the method comprising:
storing, in a log queue in non-persistent storage, guaranteed messages received from at least one client as the guaranteed messages are received;
attempting to deliver one of the guaranteed messages stored in the non-persistent storage;
determining whether the attempting to deliver one of the guaranteed messages was successful;
if attempting to deliver one of the guaranteed messages was not successful,
continuing, ~~after the attempt~~, to store the guaranteed message in the non-persistent storage;
~~responsive to the attempt~~ if attempting to deliver one of the guaranteed messages was being successful, removing the message from the non-persistent storage;
dynamically determining a delay time period;
after the determined delay period has elapsed, ~~responsive to the attempt not being~~ successful, wherein the guaranteed message still continuing to be stored in non-persistent storage, saving the guaranteed message to persistent storage so that the guaranteed message can be retrieved and delivered; and

transmitting a guarantee acknowledgement message to a client that sent the received guaranteed message whose delivery was attempted, the guarantee acknowledgement message indicating that the received guaranteed message will not be lost by the server.

14. (Previously Presented) The method of claim 13, wherein transmitting the guarantee acknowledgement message comprises:

if the guaranteed message was successfully delivered, transmitting the guarantee acknowledgement message; and

if the guaranteed message was not successfully delivered, transmitting the guarantee acknowledgement message when the guaranteed message is persistently stored.

15. (Original) The method of claim 13, wherein dynamically determining the delay time period comprises:

determining a metric based on messages handled by the server; and
determining the delay time period based on the determined metric.

16. (Currently Amended) A computer program product, disposed on a computer readable medium, for handling messages received at a server, the computer program including instructions for causing a server processor to:

store, in a non-persistent storage, messages received from at least one client as the messages are received;

attempt to deliver one of the messages stored in the non-persistent storage;

determine whether the attempt to deliver one of the messages was successful;
if the attempt to deliver one of the messages was not successful, continue, after the
attempt, to store the message in the non-persistent storage for a delay interval;
responsive to the attempt being if the attempt to deliver one of the messages was
successful, remove the message from the non-persistent storage; and
after [[a]] the delay period has elapsed, responsive to the attempt not being
successful, wherein the message still continuing to be stored in non-persistent
storage, save the message to persistent storage so that the message can be
retrieved and delivered.

17. (Previously Presented) The computer program of claim 16, wherein the instructions for causing the server processor to store messages in the non-persistent storage comprise instructions for causing the server processor to store the messages in a log queue.
18. (Previously Presented) The computer program of claim 16, further comprising instructions for causing the server processor to transmit an acknowledgement message to a client that sent the received message whose delivery was attempted, the acknowledgement message indicating that the received message will not be lost by the server.
19. (Previously Presented) The computer program of claim 18, wherein the instructions for causing the server processor to transmit the acknowledgment message to the client comprise instructions for causing the server processor to transmit the acknowledgment message to the client for a message saved from non-persistent storage to persistent storage.

20. (Original) The computer program of claim 16, further comprising instructions for causing the server processor to determine the delay.

21. (Original) The computer program of claim 20, wherein the instructions for causing the server processor to determine the delay comprise instructions for causing the server processor to:

determine at least one metric based on the received messages; and

determine the delay based on the at least one metric.

22. (Original) The computer program of claim 21, wherein the metric comprises a metric based on a number of clients using the server to deliver messages.

23. (Previously Presented) The computer program of claim 16, wherein the instructions for causing the processor to determine the delay comprise instructions for causing the processor to dynamically determine the delay.

24. (Currently Amended) A message oriented middleware server, the server comprising:

non-persistent storage;

persistent storage; **and**

at least one processor; and

instructions for causing the server processor to:

store, in the non-persistent storage, messages received from at least one client as the messages are received;

attempt to deliver one of the messages stored in the non-persistent storage;

determine whether the attempt to deliver one of the messages was successful;

if the attempt to deliver one of the messages was not successful, continue, after
the attempt, to store the message in the non-persistent storage for a delay
interval;

~~responsive to the attempt being if the attempt to deliver one of the messages was~~
successful, remove the message from the non-persistent storage; and
after [[a]] ~~the~~ delay period has elapsed, ~~responsive to the attempt not being~~
~~successful, wherein the message still continuing to be stored in non-persistent~~
~~storage,~~ save the message to persistent storage so that the message can be
retrieved and delivered.

25. (Previously Presented) The server of claim 24, wherein the instructions for causing the server processor to store the messages in the non-persistent storage comprise instructions for causing the server processor to store the messages in a log queue.
26. (Previously Presented) The server of claim 24, further comprising instructions for causing the server processor to transmit an acknowledgment message to a client that sent the received message whose delivery was attempted, the acknowledgment message indicating that the received message will not be lost by the server.
27. (Previously Presented) The server of claim 26, wherein the server instructions for causing the server processor to transmit the acknowledgment message to the client comprise instructions for causing the server processor to transmit the acknowledgment message to the client as the message is stored from nonpersistent storage to persistent storage.

28. (Original) The server of claim 24, further comprising instructions for causing the server processor to determine the delay.
29. (Original) The server of claim 28, wherein the instructions for causing the server processor to determine the delay comprise instructions for causing the server processor to:
 - determine at least one metric based on the received messages; and
 - determine the delay based on the at least one metric.
30. (Original) The server of claim 29, wherein the metric comprises a metric based on a number of clients using the server to deliver messages.
31. (Previously Presented) The server of claim 24, wherein the instructions for causing the processor to determine the delay comprise instructions for causing the processor to dynamically determine the delay.